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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,020	07/29/2005	Shinichi Miyamoto	266734US0PCT	4622
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
ENIN-OKUT, EDUE				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/526,020

Examiner

Edu E. Enin-Okut

Applicant(s)

MIYAMOTO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-845)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/25/05, 7/18/07, 3/5/08, 9/15/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

NICKEL BASED COMPOUND POSITIVE ELECTRODE MATERIAL PRIMARY CELL

Priority

1. Acknowledgment is made of Applicant's claim for foreign priority to Japan Patent Application No. 2002-253469, filed on August 30, 2002, under 35 U.S.C. 119(a)-(d). A certified copy of that application has been received.

Drawings

2. The drawings are objected to because Figures 4 and 5 clearly provides a descriptive title for the x-axis of the graphs depicted, but do not do the same for the y-axis of those same graphs. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitation of claim 4 is a duplication of a recitation also made in its parent, claim 3.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 3, these claims recite "... a higher oxide of cobalt ...". It is unclear what oxide of cobalt is being referred or what the reference point is to determine if the oxide of cobalt is a "higher" oxide.

Regarding claim 2, the claim recites "the content of the cobalt higher oxide compound ... is 0.5% by mass or more and 20% by mass or less." It unclear what the reference point for determining the mass percentage of the cobalt higher oxide compound coated on the positive electrode active substance (e.g., the coating as a whole, or the nickel base compound, or the positive active material compound as whole, etc.).

Regarding claims 3 and 4, it unclear what the recitation with respect to the mass percentage of the zinc or zinc alloy is referring to (e.g., the negative electrode material as a whole, or the amount of particles of with the recited diameter in the zinc or zinc alloy, etc.).

Claim Rejections - 35 USC § 102 / 103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tanigawa et al. (US 6,858,347).

Regarding claims 1 and 2, Tanigawa teaches a paste type positive electrode for alkaline storage batteries including a particulate nickel oxyhydroxide, coated with a cobalt oxyhydroxide, where the nickel oxyhydroxide is a solid solution containing at least one selected from the group consisting of cobalt, zinc, cadmium, magnesium, calcium, manganese, and aluminum, forming a nickel based multi-metal oxyhydroxide (Abstract; 4:4-28). The reference also discusses a powder of nickel oxyhydroxide

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particulate solid solution containing 5 wt. % zinc with a cobalt oxyhydroxide coating comprising 5 wt. % to that of the nickel oxyhydroxide (9:3-10).

As to the half-width of the nickel oxyhydroxide compound particles, although Tanigawa does not expressly disclose the properties of the of particles as recited in this claim, it is the position of the examiner that such properties are inherent, given that both Tanigawa and the instant invention have similar structures and composition. It has been held that either anticipation or obviousness exists where applicant claims a composition in terms of a function, property or characteristic, and the composition of the prior art is the same as that of the claim but the function, property or characteristic is not explicitly disclosed by the reference (e.g., *In re Best*, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977)). See MPEP 2112 (III).

Claim Rejections - 35 USC § 103

10. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanigawa et al. as applied to claims 1 and 2 above, and further in view of Durkot et al. (US 2001/0009741).

Tanigawa is applied and incorporated herein for the reasons above.

Regarding claims 3 and 4, the limitations recited in claim 3 have been addressed above with respect to claim 1, except for the zinc or an alloy of zinc as the negative electrode material comprising a powder with a particle diameter of 75 μm or less in the range of 10% by mass or more and 20% by mass or less

Durkot teaches a negative electrode containing zinc-based particles having a multi-modal distribution, such as a bi-modal distribution, of particle sizes, particle morphologies and/or particle compositions for use in an alkaline battery, such as a primary alkaline battery (Abstract; para. 18). At least about 1 percent, by weight, of the zinc-based particles have of -200 mesh size or smaller (i.e., 0.75

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mm or 75) (para. 18). Even higher weight percentages (e.g., 6 percent, 10 percent, 25 percent, 50 percent, 80 percent, 90 percent or 100 percent) of zinc-based fines can be preferable (para. 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the zinc-based negative electrode active material of Durkot in the primary battery of Tanigawa because Durkot teaches that its use can enhance cell performance characteristics such as high discharge rate performance (see Durkot, para. 13).

11. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. (WO 02/069420; refer to US 7,344,803 as an English translation) in view of Tanigawa et al.

Regarding claim 1, Harada teaches an alkaline primary cell having a prolonged life that includes an inexpensive β -form nickel oxyhydroxide as a positive electrode active material (Abstract). The nickel oxyhydroxide contains cobalt and zinc as substitutional elements for solid solution and a diffraction peak obtained as a result of measurement of X-ray powder diffraction of nickel oxyhydroxide appears only in the vicinity of 18.5° within a range of $2\theta = 10^\circ - 30^\circ$ (Abstract; 2:40-53, 5:46-6:3). The cell also employs a negative electrode formed of a negative active material including 1 wt. % of an acrylic resin added to 60 wt. % of a zinc powder (6:6-10).

Harada does not expressly teach that particles of the nickel oxyhydroxide base compound has a surface coated with a higher oxide of cobalt; or, that the particles of the nickel oxyhydroxide compound has a half-width of an X-ray diffraction peak in an X-ray diffraction pattern of 0.4 to 0.48 obtained by using a $\text{CuK}\alpha$ line as an X-ray source.

As to the coating of an oxide of cobalt, Tanigawa teaches a paste type positive electrode for an alkaline storage battery having a first active material and second active material composed of a particulate nickel oxyhydroxide and cobalt oxyhydroxide carried thereon (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to place a coating of a cobalt oxide onto the

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nickel oxyhydroxide particles in the primary battery of Harada because Tanigawa teaches that its inclusion ensures favorable conductive networks, promotes stability in the standard voltage range of a battery, enhances the electrical conductivity of the positive electrode and, in turn, ensures the sufficient discharge of the battery (see Tanigawa, 1:43-54).

As to the half-width of the nickel oxyhydroxide compound, although Harada and Tanigawa do not expressly disclose the properties of the particles as recited in this claim, it is the position of the examiner that such properties are inherent, given that both Harada, as modified by Tanigawa, and the instant invention have similar structures and composition. It has been held that either anticipation or obviousness exists where applicant claims a composition in terms of a function, property or characteristic, and the composition of the prior art is the same as that of the claim but the function, property or characteristic is not explicitly disclosed by the reference (e.g., *In re Best*, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977)). See MPEP 2112 (III).

Regarding claim 2, Tanigawa teaches a powder of nickel oxyhydroxide particulate solid solution containing 5% zinc with a cobalt oxyhydroxide coating comprising 5 wt. % to that of the nickel oxyhydroxide (9:3-10).

12. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. and Tanigawa et al. as applied to claims 1 and 2 above, and further in view of Durkot et al.

Harada and Tanigawa is applied and incorporated herein for the reasons above.

Regarding claims 3 and 4, the limitations recited in claim 3 have been addressed above with respect to claim 1, except for the zinc or an alloy of zinc as the negative electrode material comprising a powder with a particle diameter of 75 μm or less in the range of 10% by mass or more and 20% by mass or less

Durkot teaches a negative electrode containing zinc-based particles having a multi-modal distribution, such as a bi-modal distribution, of particle sizes, particle morphologies and/or particle compositions for use in an alkaline battery, such as a primary alkaline battery (Abstract; para. 18). At least about 1 percent, by weight, of the zinc-based particles have of -200 mesh size or smaller (i.e., 0.75 mm or 75 μ m) (para. 18). Even higher weight percentages (e.g., 6 percent, 10 percent, 25 percent, 50 percent, 80 percent, 90 percent or 100 percent) of zinc-based fines can be preferable (para. 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the zinc-based negative electrode active material of Durkot in the primary battery of Harada, as modified by Tanigawa, because Durkot teaches that its use can enhance cell performance characteristics such as high discharge rate performance (see Durkot, para. 13).

Contact / Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edu E. Enin-Okut whose telephone number is 571-270-3075. The examiner can normally be reached on Monday - Thursday, 7 a.m. - 3 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer

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Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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